GrummanWorld

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Grummanites At The Cape 'Happy To Be Back In Business'

KENNEDY SPACE CENTER, Fla.— On September 29, the shuttle *Discovery* blasted off from the launch pad. Along with its five crew members, *Discovery* carried an invisible payload; the hope and good wishes of millions, especially those of the 750 Grummanites who work at the Center.

While some cried, others couldn't clap hard enough as they watched the orbiter climb into space. "Go, go, go!" repeated one Grummanite, as though if she stopped the spacecraft would fall. Another shouted, "Godspeed, *Discovery*."

Several minutes later, there was a hush as the shuttle separated from its solid rocket boosters — a sign that everything was OK. As the boosters fell towards the ocean the crowd sighed and resumed cheering even louder than before.

"I'm trying to think of another time in my life when I was happier," said Scott Green, an administrative clerk.

These Grummanites work on the Shuttle Processing Contract team. Grumman's Technical Services Division operates and maintains the computers and software used to prepare and launch the Space Shuttle. The division is also responsible for the instrumentation and calibration at the shuttle launch site.

For about a week before the launch almost everyone in Brevard County, the home of the Space Center, wore green bows to

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Too Incredible For Words. *There were tears and smiles from Grummanites Debbie Franco (L) and Connie Freehill as they watched* Discovery *make its way into space. For the Grummanites at Kennedy, the perfect launch meant a job well done.*

Navy Studying E-2C Multiyear Purchase

The Navy has raised the possibility of a multiyear buy of 50 E-2C Hawkeyes.

The proposed program would stabilize the production line for five years, fill the Navy's projected need for Hawkeyes, and save an estimated $1 billion over an annual buy of six aircraft a year.

"Right now we're building one aircraft every two months," says Program Vice President Harvey Fromer. "That's a very uneconomical rate."

The multiyear contract would raise the rate from six to 10 aircraft a year. The higher production rate would not only lower the cost of each plane, it would also help stabilize the work force. The increased work on E-2C's could come at a time when the last of the C-2A Greyhounds, also produced under a multiyear contract, will be delivered. That's near the end of 1989.

Congress took the initiative on the E-2C multiyear idea. According to Fromer, the House Appropriations Committee asked the Navy to assess the potential for an E-2C multiyear procurement. Grumman has prepared several options. In addition to the basic six a year and the 50 aircraft multiyear scenarios, the Navy is also looking at buying two multiyear lots — one of 30, one of 20 — spread over eight years.

The Navy asked Grumman to poll its subcontractors and use its C-2A multiyear contract expertise to come up with the dollar figures. The Navy bought 39 C-2A carrier on-board delivery aircraft from Grumman under a multiyear contract.

There is one basic hurdle to any multiyear procurement: "Congress will have to come up with more money in the front end," says Fromer.

If 50 planes are ordered in fiscal year 1991, the government will spend over $76.8 million more in 1990 than if it just ordered six Hawkeyes. In fiscal 1991, the government will spend $228.6 million more. The increase pays for the raw materials, subcontractor-made parts and start up costs for 50 planes.

But, in fiscal year 1992, the government will save nearly $117 million, according to estimates. By the time the last plane is delivered, the government will have saved procurement and manufacturing costs totalling $1 billion: $383 million from the multiyear contract and the rest from economical procurement rates.

There was some mention in the media that the multiyear contract could be signed as early as 1989. "Fiscal year '89 is too soon for multiyear even if you moved heaven and earth," says Fromer. "1990 is the question mark. The problem is that you need a stable configuration and we're about to go through a major design change."

He says the Navy is now testing a target detection system upgrade — called Group II — at

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O'Brien Says Company's Success, Survival Depend On TQP

On Thursday, September 29, 250 Grummanites gathered in the Bldg. 5 cafeteria at the crack of dawn for a hearty breakfast. The main course was an update of the Total Quality Process (TQP) at Grumman.

Dean Cassell, Grumman Corporation vice president in charge of the company-wide TQP effort, welcomed the group. The attendees, all facilitators or members of TQP action teams, each received a GQ pin. GQ is the company's stock tickertape symbol — but as the company's TQP logo, it stands for Grumman Quality.

Chairman John O'Brien once again pledged his total commitment to TQP. "Our success, and I really believe our survival, depend on creating a total quality culture throughout Grumman," he said.

"The Grumman grapevine already tells me that some of you do not believe that I am committed to this program nor that I will make the changes that you may recommend," stated O'Brien. "Let me tell you right here and now that I went through the training program. I will make any change to make this a better corporation. Let's get on with it. We have an opportunity to make this a greater company than it already is and to beat the hell out of the competition as a result of it."

Aircraft Systems President Pete Oram outlined what the TQP action teams in his division were tackling. They range from arriving at proper estimates to curtailing rework to properly outfitting aircraft modification kits.

"The toughest part of having a successful TQP at Grumman is management communication. We'll be hearing about it over and over again," said Oram. "I don't believe it will take care of itself. We're going to have to stay with it for quite a while."

Oram said that almost 16,000 people in Aircraft Systems will eventually be trained in the total quality process. "By the end of next year, we will touch everybody in the division," he said. "We must convince them that there is a process in place that will allow them to affect the way work is done at Grumman in a very positive way."

Carol Korade, Data Systems manager of Network Control, told the group that her TQP action team is investigating how to improve the Help Desk service for internal customers. Today, there are about 13 Help Desks, each offering solutions to specific problems. Korade's group is exploring the feasibility of allowing customers to call one Help Desk telephone number.

At the end of the meeting, each of the 22 Grummanites who have been trained as facilitators were honored. They received a copy of *One of a Kind*, the latest book about Grummman, and a certificate from O'Brien. They presented O'Brien a cartoon depicting what they thought a Grumman facilitator stood for in the TQP process.■

The Breakfast Club. *On September 29, Grumman Chairman John O'Brien met with Grummanites who have begun the Total Quality Process. O'Brien said, 'Our success, and I really believe our survival, depend on creating a total quality culture throughout the company.'*

TQP Expansion. *Aircraft Systems President Pete Oram said that by the end of next year, over 16,000 Grummanites in his division will join the Total Quality Process at Grumman. (Photos by Rich Breunig)*

TQP Sparkplugs

Twenty-two Grumman facilitators were honored at the Total Quality Process meeting on Thursday, September 28. They received a certificate and a copy of *One Of A Kind*, a recently published book about Grumman. The facilitators are:

Aircraft Systems
Jim Erickson
Harry Beringer
Tom Forbes
Ernest Berlucci

Data Systems
Lou Majore
Stan Serota
Jim Diffley
Carol Korade
Bob Service
Steve Calavas
Dorothy Greggo
Lynn Murphy
Don Stanford
Jim Kinneman

Electronics Systems
Doug Morgan
Emery Columna
Bettie McDonald
Gregory Ryan

Corporate Services
Business Operations
Don Purcell
Harlyn Van Sloten
John Rosse
Don Fechter

Unit Values

The unit values for the Grumman Employee Investment Plan as of August 31 (compared to July figures) are:

Equity Fund
4.267, down from 4.329

Fixed Income Fund
6.160, up from 6.156

Guaranteed Income Fund
2.861, up from 2.835

Company Stock Fund
$22.31, up from $21.68.

Grumman Takes New Radar Up For A Spin

On September 30, Grumman flight tested an advanced new A-6 radar for the first time. It currently has only one of six software systems that will allow it to track targets and map terrain in a number of ways. However, Grumman program engineers could readily see the potential in the Norden APQ-173 system.

"We're absolutely pleased with what we saw," says Joe Cagnazzi, the deputy program director for A-6 Development. "The radar is much better than the A-6E's."

The new radar is earmarked for what Grumman hopes will be the A-6G Intruder, an electronically new aircraft. The new radar is being flight tested in Grumman's A-6 Digital Systems Demonstrator, which was previously an A-6F prototype containing all new avionics.

During the 25-minute first flight, Grumman Chief Test Pilot Kurt Schroeder and bombardier/navigator Dave Goulette put the ground map surveillance software through its paces.

"We ran this check flight to make sure the interface was operating properly and to see what the radar images looked like from an aircraft," says Sandy Cines, avionics program manager. The radar images were recorded electronically on video tape. When the plane landed, the engineers were able to see the same images the flight crew did.

Grumman will fly the new radar about once a week, Cagnazzi says. They expect the next major piece of software in December.■

Trials In Blissful Environment. *Fort Bliss, Texas, was the scene of the Army's operational tests of Grumman's IFTE system. The IFTE base shop test facility is the right vehicle of the pair in the center; the other carries spares and equipment. There are two identical pairs of IFTE vehicles under the camouflage. The IFTE system tested the vehicle on the far left.*

Grumman's New Tester Completes Rigorous Trials

Grumman Electronics Systems' Intermediate Forward Test Equipment (IFTE) took a licking from the Army and kept on testing after eight grueling weeks of combat-like conditions at Fort Bliss, Texas.

Program Vice President Don Kump reports that all the systems "worked like gangbusters" during the operational tests. The system showed no high-technology performance problems. What minor problems the tests did uncover were associated with the transportation of equipment and the interpretation of maintenance publications.

IFTE, built by the Test Equipment Products group, is a computerized automatic tester that the Army will use to find faulty components in weapon systems in combat conditions. All new Army weapon systems will have to be IFTE-compatible, and many current systems will use it, too. Right now the computer programs, called test program sets, are needed to test the modernized Hawk missile and Multiple Launch Rocket systems being readied for fielding.

IFTE consists of three testers. Two of them — the base shop test facility and the contact test set — were the subject of the tests at Fort Bliss, which ended last month.

The base shop test facility is a test lab with two workstations inside a shelter that's about the size of a back yard shed. It sits on the back of a five-ton truck. The soldiers who operate it go to the front lines to troubleshoot faulty circuitry in weapon systems. They carry the hand-held contact test set to the weapon system to isolate damaged black boxes. They then bring these damaged boxes back to the BSTF to locate the failed components.

For eight weeks, day and night, five days a week in the Texas summer heat, the Army worked the two units. Every 30 hours the soldiers who operated the equipment would pack it all up, drive 26 miles over rough terrain and set up again.

The setting up and tearing down of the IFTE equipment were done with the soldiers in fatigues and in chemical warfare clothing. When a soldier is covered with air mask and chemical-proof suit, Kump says that pulling down camouflage netting and securing electronic hardware is hot, awkward, slow work. "It's unbelievable what both the soldiers and the equipment went through."

The test results are now in Grumman's hands. "We're analyzing them, but the bottom line is that the Army likes the system," says Kump.

So do the Marines, who have signed on to use IFTE for their Hawk missiles.

But it will be the Army that gets the first base shop test facility and contact test set. The production contract is now being negotiated and manufacturing should begin in January. The Army will put the first base shop test facility into the field in September of 1990.

The hardware will be built by Electronics Systems in Great River, Long Island; Benton Park, Pennsylvania; and Salisbury, Maryland.

The third IFTE unit, the commercial equivalent equipment, is now in production. The commercial equivalent equipment is electronically equivalent to the work stations in the base shop test facility. However, it was designed to be used in Army depots and at the weapon systems manufacturers' plants so they could create test program sets for their systems.

Electronics Systems has delivered six commercial equivalent equipment units already. Three have gone to Army installations, one to the Harris Corporation, and Test Equipment Products has two at its Melville, Long Island, headquarters. Fourteen more are now in the production cycle.■

Kilroy Goes Hi-Tech. *A member of the Army test team looks for system problems in a test vehicle with the IFTE contact test set.*

1989 Scholarship Deadline Is Nov. 1

The Grumman Science and Engineering Scholarship program has begun its search for 1989 scholars.

This competitive program is open to Grumman dependents who are high school seniors planning to earn a four-year science or engineering degree, as well as to all Nassau and Suffolk high school seniors. Applications and information are available from Nassau and Suffolk high school guidance offices and all Grumman off-Long Island site administration offices.

Don't delay. The entry deadline is November 1. For information, call Sue Mannix or Paul Sluiter at (516) 575-2682.

New Venture

Grumman has signed an agreement with ORYX Corporation of Paramus, N.J., to test and evaluate its super signal processor. This very high speed computer system allows radar, sonar or image-related signals to be processed in real time. Over the next 18 months of testing, Grumman will evaluate the system for military applications.

Last Metal-Winged A-6 Delivered To The Navy

CALVERTON, L.I., September 23 — The last production A-6E built with Grumman's metal wings was delivered to the Navy today.

Aircraft number E184 left Calverton at 9:40 p.m. and headed for the Naval Air Station at Patuxent River, Maryland. There it will undergo testing and receive its squadron assignment.

This aircraft is the last plane to be produced under the fiscal 1986 contract, which called for metal wings. The eleven aircraft now being built with fiscal '87 dollars and the 10 new planes scheduled for delivery in 1990 will fly with composite wings.

However, aircraft number E185, the first aircraft scheduled to receive the composite wings, is still waiting. Boeing, the manufacturer of the new wings, is having difficulty meeting its deadlines. The first composite test wing should have been delivered in November 1987. By mid-1988 the wings were to have been delivered at a rate of six a month. To date, however, only one wing has been delivered and it is incomplete.

Grumman may continue to build metal wings for a while. Recently, the Navy informally asked Grumman to build 10 of the metal wings as a stopgap measure to the composite wing problem. "Although no formal papers have been signed, a contract is imminent," says Jerry Lester, A-6 production director.

The additional metal wings would be used on fleet A-6s that are now grounded with wing problems. Therefore, the stopgap measure will not help Grumman's A-6 production line. Major assembly work is being slowed down and Grummanites who do final assembly work at Calverton may have to be assigned to other programs until the wing problems are cleared up.■

Volume Sale? *It could get crowded in Building 4 in Bethpage if Congress and the Navy opt for a 50-aircraft, multiyear buy of E-2C Hawkeyes. Such a program would raise the yearly production rate from six to 10 aircraft and lower the per-plane price. (Photo by Bob Settles)*

Up In The Air — E-2C Multiyear Buy

(Continued from page 1)

Patuxent River. This upgrade includes the APS-145 overland radar. Fromer says, "This doesn't get into the airplane until fiscal year 1989. We must get it tested, prove that it works, stabilize the design and then we can safely go into multiyear."

Though the number is classified, the Navy has determined how many Hawkeyes it needs for its airborne early warning mission until the Advanced Tactical Support Aircraft (ATSA) comes along. The ATSA is the plane that could replace the E-2C, EA-6B and S-3A. The 50 Hawkeyes will get the Navy to that number. If the ATSA enters the fleet on time, E-2C production could end.

"If the ATSA is not ready," says Fromer, "some of the early E-2C's will start to retire." The Navy would then have to decide if it wanted to continue E-2C production.

There is one complication to this multiyear buy. The stabilized production configuration required by a multiyear contract creates an obstacle for Grumman as it tries to sell Hawkeyes to foreign military customers.

"One problem is that the Group II configuration currently is not releasable to foreign countries," Fromer says. "However, the Navy is working on that problem."

Fromer says that there are now three countries that are expected to add to their current Hawkeye fleets: Japan is looking to add five Hawkeyes; Egypt might buy one, as might Singapore.

However, Korea is also showing interest in the Hawkeye, and so is Pakistan. And now that France has begun building the first of two aircraft carriers, its Navy is interested in the E-2C.

If all the obstacles are cleared, says Fromer, "We could be under contract by the end of next year. There's a lot of work to do but Washington is very interested in getting 50 aircraft for the price of 33."■

Looking Good. *The last metal-winged A-6E gets checked by a Navy flight crew before being delivered. The Intruder left Grumman's Calverton facility September 23 and headed for the Naval Air Station at Patuxent River, Maryland. (Photo by Gerry Costello)*

Don't Forget To Check Your Cholesterol Count

The Grumman Medical Department is sponsoring a cholesterol screening this fall. The testing is performed by the Top of the Line Health Industries. The fee is $7 per person. Here is where the testing will take place in upcoming weeks:

Date	Place	Time
Oct. 19	Bldg. 47—Program Conf. Rm.	11:30 a.m. to 2 p.m.
Oct. 21	Bldg. 2—Conference Room	11 a.m. to 3:30 p.m.
Oct. 24	Bldg. 7—Buffeteria	11:30 a.m. to 4 p.m.
Oct. 25	Bldg. 6—Old TV Room	11:30 a.m. to 4 p.m.
Nov. 7	Bldg. 44—Cafeteria	11:30 a.m. to 4 p.m.
Nov. 10	Bldg. 235—lst Floor Classrm.	9:30 a.m. to 2 p.m.
Nov. 14	GHQ—Concourse level	11 a.m. to 3 p.m.

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They're Really Doing It This Time: Getting All Computers To Communicate

Pretty soon, if you have a personal computer on your desk, you'll be able to send messages and documents to virtually any other computer system in Grumman.

Grumman Data Systems has launched its Corporate Office Interconnectivity Network, which aims to tie together hundreds of separate systems in Grumman. Eventually, there will even be electronic mail addresses in the Grumman phone book, alongside the person's extension and mail stop.

The project builds on previously established networks, the most prominent being the WangNet. This network enabled 1,000 people with Wang computers, most of them in the Bethpage area, to communicate with each other. In addition, there were smaller office networks of IBM, DEC, Apple, and Hewlett-Packard computers.

"Each of those systems is great if you must send information to a person who has the same brand of equipment," says Judy Galgano, manager—Office Systems and Microcomputer Technology in Data Systems' End-User Computing department. "It can be trickier to get different kinds of computers to communicate."

For starters, the End-User Computing people will set up communication links for data and documents. Eventually, though, the group would like to develop ways to communicate computer *applications*.

These are the custom software systems developed by Grummanites to enable their computers to perform certain tasks. If sent from one brand of equipment to another, the result can be indecipherable — and useless.

A product called Soft-Switch is simplifying the task of interconnectivity. It is a software package that translates the computer codes of many different brands of equipment. "Soft-Switch not only supports our major types of equipment, but less widespread systems such as Xerox and NBI," says Galgano.

Galgano cites the Corporate Proposal Center as an area that interconnectivity will benefit. The center uses Wang, DEC and IBM systems. "Now, pieces of the proposal must be printed out and then retyped — or at best output onto a diskette," says Galgano. "Once links are established, that will no longer be necessary."

All these interconnected office systems will eventually be linked to terminals in the executive suite. A team headed by Barbara Mencher, manager of End-User Technology and Support, has developed such an information system for Bob Myers, president of the Data Systems Division.

"The system uses a touch screen, and there is no keyboard," says Mencher. "It provides an on-line quarterly review of sales, finance, personnel, and other division business.

"A spinoff of that was the automation of some departments in Data Systems, in order to feed that information to Bob Myers," says Mencher. "Until now, many groups submitted their reports on paper."

Information can also go the other way. If Myers receives a report from the Department of Defense about a business opportunity, he can send an electronic message to the Data Systems Marketing Department.

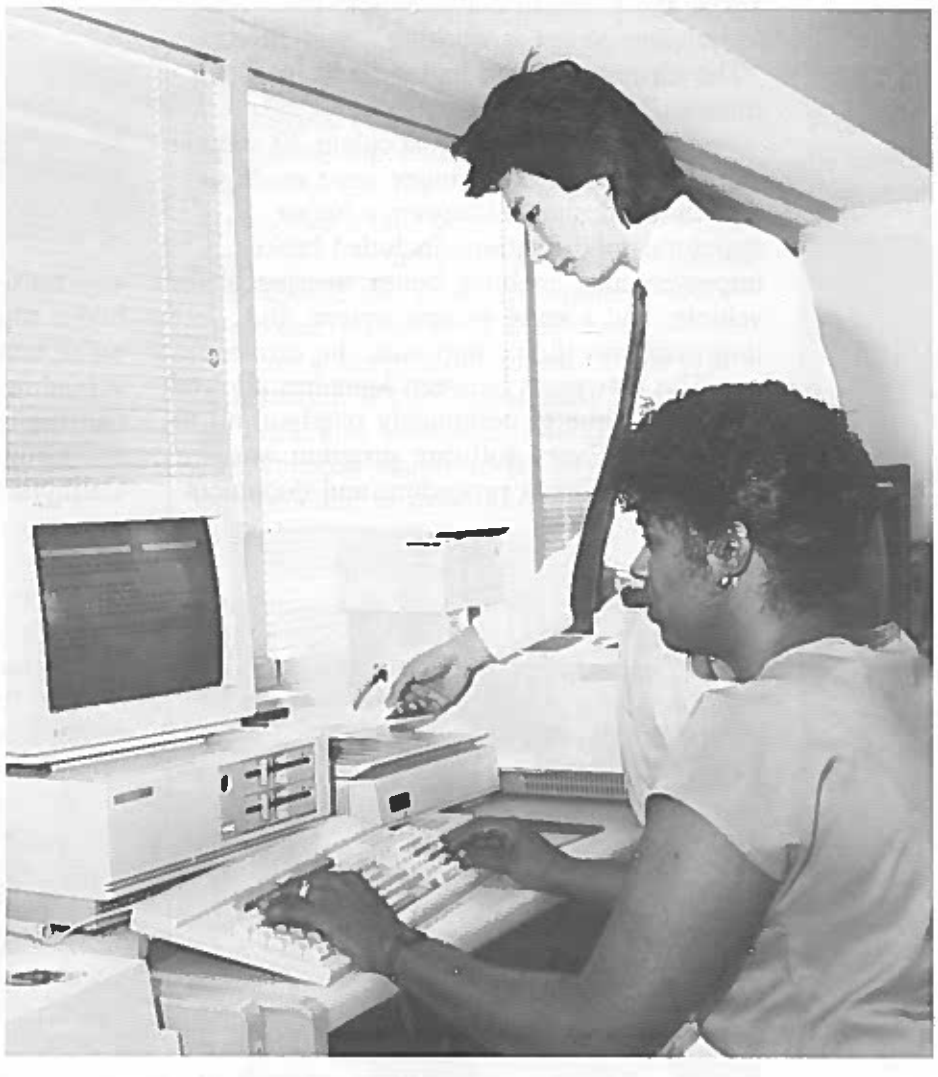
"We aim to provide all Grumman division presidents with the same capability," says Mencher. "These will be linked with a corporate decision-support system now being developed for Grumman Chairman John O'Brien." Systems are also being developed for Aircraft Systems Manufacturing, Corporate Technology, and industry information for Corporate Marketing.

Office interconnectivity and executive information systems are among the main items of discussion for the End-User Computing Technical Forum. Officers and directors from all divisions are being invited to the forum, which will be held in Headquarters November 16.

End-User Computing supports Grummanites in the cost-effective use of personal computers, minicomputers, and mainframes. It helps them develop ways to access and analyze computerized data, as well as helping set up office automation and electronic communication networks.

For details on how you can become part of the Corporate Office Interconnectivity Network, contact Judy Galgano at (516) 575-4390. For information about executive support systems, contact Barbara Mencher, (516) 575-9944.■

Facts At Fingertips. *Barbara Mencher demonstrates the use of the touch-screen, decision-support computer developed for Data Systems President Bob Myers. (Photos by Bob Sagliocca)*



The Grumman Connection. *In Grumman's Personal Computer Center, Tracey Cruz (seated) and Darrell Low try out a Hewlett-Packard microcomputer. Grumman Data Systems recently announced a project to tie together office systems throughout the entire corporation.*

Obituaries

David M. Bailey of Paint Shop, Stuart, Aircraft Systems Division, died Aug. 31 at the age of 63. He had been with the company since 1968 and resided at 712 Howie Dr., Fort Pierce, Florida.

John Brooks of Machine Parts/Material, Bethpage, Corporate Services Division, died Sept. 18 at the age of 58. He had been with the company since 1952 and resided at 14 Mayflower Ct., Centerport, N.Y.

Cornelius F. Copland of Central Receiving, Bethpage, Aircraft Systems Division, died Sept. 10 at the age of 70. He had been with the company since 1959 and resided at 264 Green Valley Rd., East Meadow, N.Y.

Vincent Pulito of Technical Development Management, Bethpage, Aircraft Systems Division, died Sept. 12 at the age of 58. He had been with the company since 1965 and resided at 3 Elmore Pl., East Northport, N.Y.

Walter G. Richter of Producibility Engineering, Bethpage, Aircraft Systems Division, died Sept. 3 at the age of 54. He had been with the company since 1952 and resided at 2344 Lafayette St., North Bellmore, N.Y.

Richard Specion of Assembly, Webster, Aircraft Systems Division, died Sept. 26 at the age of 41. He had been with the company since Aug. 1988 and resided at 5908 Country Pl., League City, Texas.

James C. Watson of Program Planning, Melville, Aircraft Systems Division, died Sept. 16 at the age of 52. He had been with the company since 1975 and resided at 675 Lakeway Dr., North Babylon, N.Y.

Next Issue: October 28

Grummanites' Spirits Soar With Space Sh

(Continued from page 1)

symbolize a "go for launch." Little girls used the ribbons to tie their pig tails; hotel clerks wrapped them around room keys.

Grummanites were no different. Still wearing the bows they received with their last paychecks, some made their way back to their offices after the launch to celebrate. People had brought in homecooked dishes of all sorts: navy beans and ham hocks—a traditional after-launch meal; chicken; potatoes; lasagna and much more. In one area, the conference table was set up like Thanksgiving. For these folks, that's exactly what is was.

The television in the office remained on for the rest of the afternoon. It was a way to hang on to the excitement for a little longer. And when, during a televised press conference, NASA Administrator James Fletcher thanked all those involved in the shuttle program, everyone applauded as if he was thanking each one of them personally.

Skip Olson, vice president and project director, Shuttle Processing Contract, explained his feelings about the work done on the program. "It only takes one launch to get hooked," said Olson. "You have to feel the ground shake and the buildings vibrate to really understand what it means to be here. The emotional reward for the team's good work is incredible."

It isn't just the employees who are proud of the work Grumman does: the customer is very proud as well. "Grumman is a great team member," said Al Parrish, director of Ground Engineering for NASA. "From the top down and the bottom up, its people are dedicated to the space program. They are always willing to do what's necessary to get the job done."

Discovery's launch was controlled from the Space Center's Firing Room One. Here, all the test data from systems aboard the shuttle are monitored and analyzed. Over 40,000 functions are watched. If any of the systems should fail during the countdown, the launch could be scrubbed. The accuracy of this information relies on the top-notch performance of hardware running the test software. That's where Grumman comes in.

About 35 Grummanites were in the firing room for *Discovery*'s launch. While the shuttle's engineering and test conductors sat at their consoles studying test data, Grummanites sat at their master console and monitored the equipment used throughout the firing rooms. "We run the hardware, so they can run the launch," said Tom Arnsmeyer, checkout control and monitoring subsystem maintenance manager.

Arnsmeyer spent 12 straight hours prior to the launch checking the 180 interface modules that help transmit data from the shuttle to the firing room. This includes data on systems such as the main engines and external tanks.

'You have to feel the ground shake and the buildings vibrate to really understand what it means to be here.'

"Everything ran perfectly," said Arnsmeyer. "We weren't noticed — that means we were successful."

Tom Richards, a test conductor, sat at the master console for the launch. "I can only compare this day with my wedding day," said Richards. "This launch was really special to all of us."

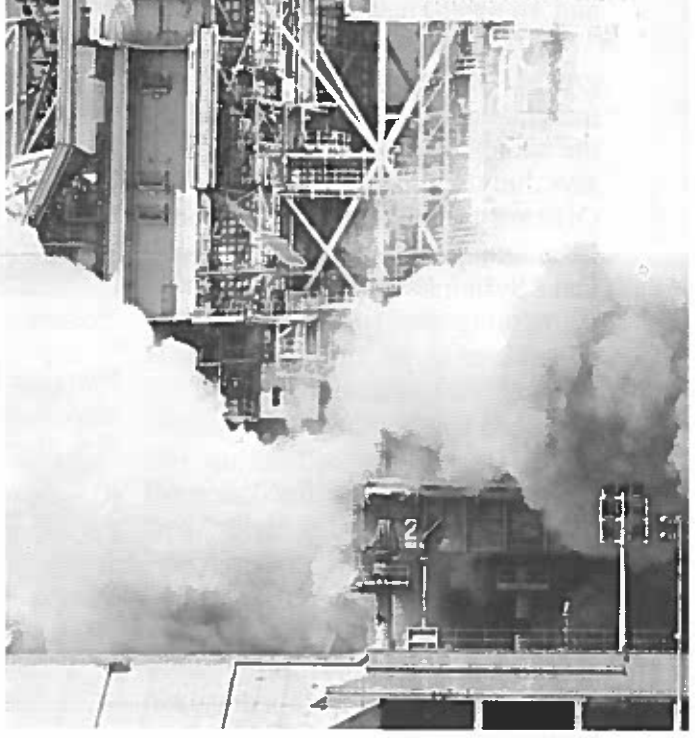
During the countdown, Richards tested the hardware to make sure the right data was getting to the right consoles. He recalled the night before when, at midnight, the console that monitors the payload functions overheated and failed.

"We assigned one system engineer to assess the problem and a couple of technicians to get it working," said Richards. "The Grumman team had it fixed in 15 minutes."

After the *Challenger* accident 32 months ago, more than 200 changes were made to the shuttle design. *Discovery*'s major structural modifications included brake improvements, enabling better steering of the vehicle, and a crew escape system. But improvements didn't stop with the orbiter.

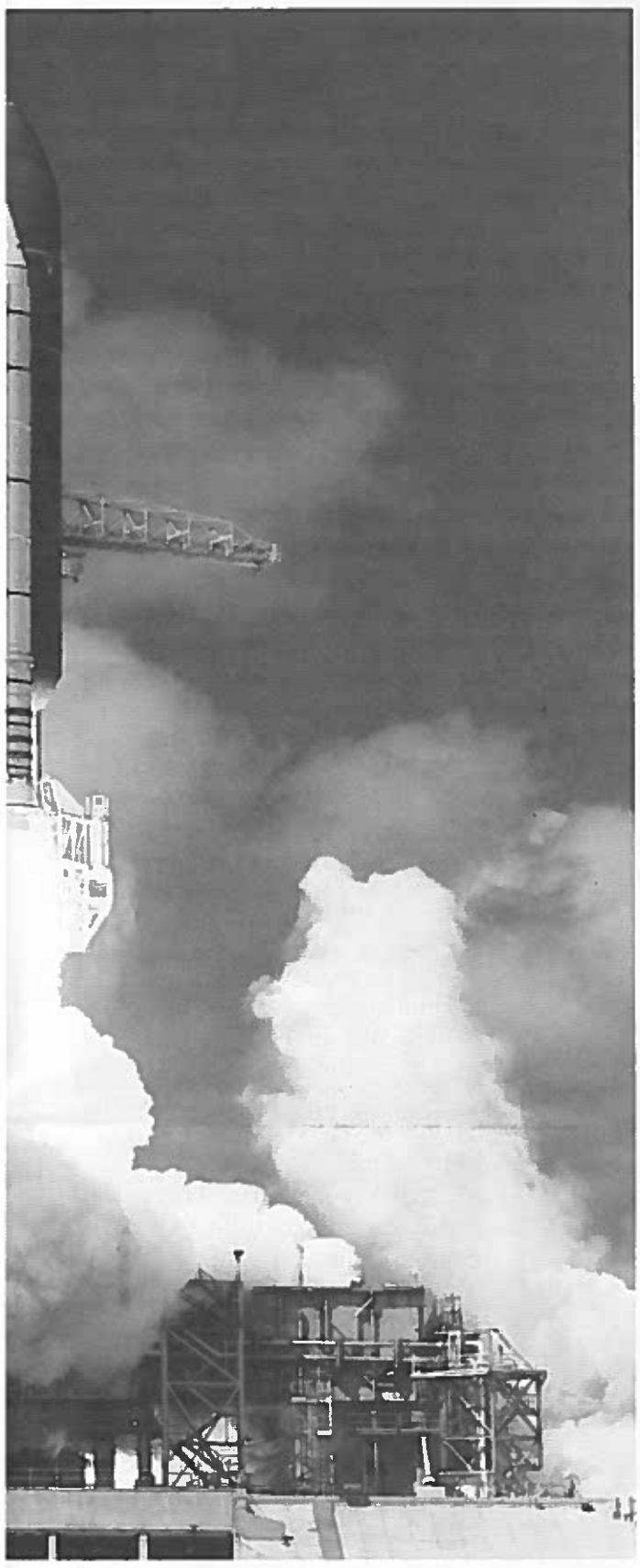
The two years between launches allowed Grumman time to completely overhaul all its equipment. Every software program was rewritten and each procedure and document was looked at and reassessed. "We've always had a super team," said Olson. "But now we're better. The refurbishment was something we always wanted to do, but never had the time or the money."

Grummanites in the Instrumentation and Calibration department used to take about



A Day They'll Never Forget. *Wearing green bows to symbolize a 'go for launch' (above, L to R) Denise Cottrell, Eddy Payne, and Jan Wilkerson, patiently waited for* Discovery's *liftoff. Outside their offices, Grummanites cheered the launch with other contractor employees.*

ıttle Discovery



160 measurements of environmental effects on the shuttle's equipment. The system was improved so that they now record over 700 measurements.

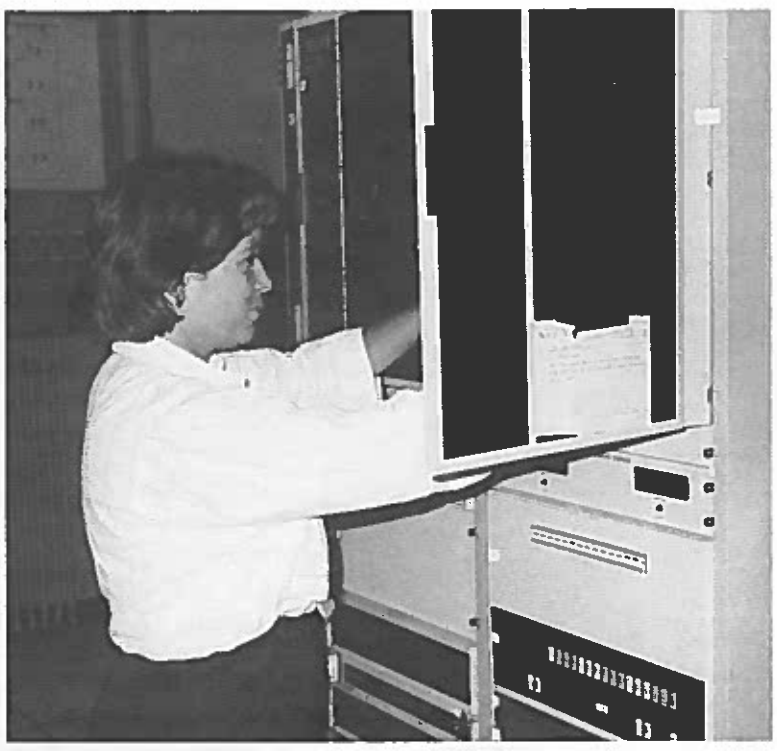
Phil Davidson is a measurement system engineer. By placing strain gauges and transducers on different equipment aboard the shuttle, his group can see how it reacts to various forces.

For example, what is the strain on the aft skirts of the solid rocket boosters during the launch? Or, how are the posts that secure the rockets to the vehicle holding up?

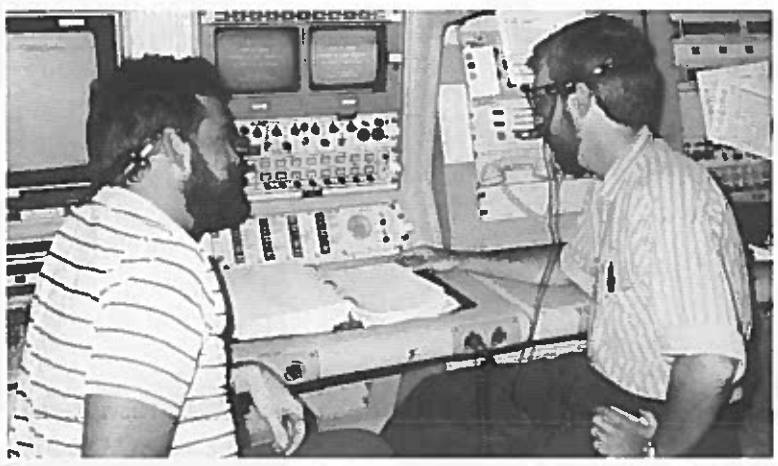
"It's a very serious business out here," said Richards. "There is no allowance for error. We are working with the most sophisticated flying machine in the world and we can never forget that."

While *Discovery* orbited the earth for four days, work continued on *Atlantis*, scheduled to launch sometime in November. If all goes as expected, NASA plans to safely launch one shuttle each month.

"Discovery has revitalized the space program," says Olson. "While we will never forget the Challenger, we are extremely happy to be back in business."■



Hard Work, Great Reward. *During* Discovery's *launch, test conductors Ron Kennedy (below, L) and Tom Richards sat at Grumman's master console to monitor the performance of computer hardware receiving test data from systems aboard the shuttle. Barbara Buchholtz, a senior data analyst, kept a close eye on the equipment recording the data.*



Family Cheers For 'Pinky'

"You told me your nephew worked for NASA but you never said he was an astronaut," says a fellow worker to Bill Nelson, a contract administrator in Building 30.

Bill is the uncle of *Discovery* astronaut George "Pinky" Nelson. Both he and his wife Lois, a Grumman secretary in Building 35, traveled to the Kennedy Space Center in Florida to watch Pinky blast off.

"I tried to think only positive thoughts," says Bill. "With all the quality checks they have incorporated since the last launch, I was confident everything would go smoothly...although I have to say I held my breath for a while."

The Nelsons don't talk much at the office about Pinky's success. Bill says all the glory belongs to Pinky. "It's just a pleasure to be in the same family," says Bill. "We are all quite proud of him."

Glad Scientist

Dr. David Larson, a Corporate Research Center staff scientist, was one of the 250,000 onlookers at Cape Canaveral on September 29.

Larson developed a materials processing experiment that flew aboard *Discovery,* the first space shuttle mission in two and a half years. Larson's experiment is the third of a series: the last flew aboard the shuttle in January, 1986, immediately preceding *Challenger.*

"As a scientist interested in this type of research, it's an opportunity to actually get back into business," said Larson. "We've been unable to fly any experiments, to develop or prove new ideas in flight.

"On top of that, it's exciting and moving just to witness the launch. I brought two of my kids with me and of course, they were very excited, too."

In Larson's experiment, a bismuth manganese alloy was heated in a small furnace. Previous tests have improved the material's magnetic properties.

This flight experiment studied the effects of reduced convection on the material's crystal structure and chemistry. Convection is the motion of heat in a fluid, and is influenced by gravity. In a gravity environment, when a metal is heated to melting, convection causes motion within the molten material.

Convection can also disturb the growth of crystals by changing the alignment or pattern of the crystalline structure, creating imperfections in the material. In the weightlessness of space flight, that effect is lessened, making for better crystals.

The experiment involved a process called directional solidification, in which precisely controlled temperatures and motion are used to solidify a material. The experiment's Automated Directional Solidification Furnace, built by GE, actually contained four chambers. Each had a sample of the alloy inside, and each was turned on once for eight hours.

Over the next year, Larson and his team will analyze the material's crystal structure, temperature time history, magnetic properties, chemical distribution, and other factors.

Larson's research is longstanding. Before the advent of the Space Shuttle, he flew experiments on the Apollo-Soyuz mission of 1975 and on rockets launched from White Sands, New Mexico.

"This illustrates the advantages we'll have on a Space Station," he says. "We'll be able to conduct an experiment, learn from it and plan for the next experiment — in a matter of weeks rather than years."

Grumman won't be getting into the bismuth manganese business: the experiment will set the stage for future experiments using semiconductor and detector crystals.

Those materials will be the subject of flight experiments to be flown sometime in 1991 or 1992. Grumman will bid on those research contracts later this year.

United Way Helps People In Your Community

"I'll be at Grumman 10 years this February," says Grummanite Don Cassese, "and I've been giving to the United Way since the day I started."

Cassese, a leadworker for Building 3's Chromic Anodize department, has two important reasons for supporting the United Way.

His niece, now in her '20s, developed a bone disease when she was a small child. She underwent several operations and received therapy.

"Today, my niece can walk," says Cassese. "Over the years, her family brought her to many different United Way-supported agencies. If they hadn't been there, she wouldn't have received the help she needed; my sister could not have handled this on her own."

Now, Cassese's seven-year-old grandson is confined to a wheelchair due to a muscle disorder. "My family and I contribute on our own to the muscular dystrophy and multiple sclerosis societies," he says. "But the United Way is the easiest way to support a wide variety of agencies."

Last year, six out of seven Grummanites supported the United Way through payroll deduction. This month, most Grumman sites will kick off their 1988 campaigns. The drive on Long Island began October 10 and ends October 28.

"Grummanites have always taken a leadership role in raising money for the United Way," says Grumman Vice President Steve Dely, who is Grumman's 1988 United Way campaign chairman. "Government funding for human services has been cut back drastically in the '80s. Each year, the 141 agencies and hospitals supported by the United Way of Long Island rely even more on our generosity."

You don't have to look very far to find evidence that human needs are going unmet in America today.

- According to the lowest estimates, half a million people in America are homeless.
- The need for child care is rising as growing numbers of women enter the work force. There are 6.6 million single parents raising nearly 15 million children.
- By the year 2000, more than 35 million Americans will be over 65 years old. Programs are needed to ensure the health and security of this growing group.
- There are 18 million problem drinkers in America. Their children — seven million young people under the age of 18 — are themselves at risk of alcohol abuse and mental-health problems.
- Despite America's great technological successes, 23 million adults cannot read a simple sentence.

United Way supports the greatest variety of human services and programs in the U.S. — approximately 37,000. Administrative and fundraising costs are low — between 88 and 92 cents of every dollar goes directly to helping people in the community.

Each local United Way organization — there are 2,200 across the U.S. — spends the money in its hometown. Each is governed by an independent board of volunteers that studies the most acute problems in its community, and funds agencies working to combat them.

United Way of Long Island will distibute over $7 million to area agencies and hospitals over the next year. It is helped in that task by about 120 Long Islanders who volunteer a total of 6,000 hours a year.

In these days of fundraising scams, it's reassuring to note that a United Way-funded organization must be nonprofit, with a volunteer governing body. Its finances must be audited annually by an independent firm. And, it must provide service at a reasonable cost and have a policy of nondiscrimination.

"If you already support the United Way through payroll deduction, please think about giving a little more each week," says Dely. "If you are not donating, join your fellow Grummanites and give the United Way in 1989."

Early this month, Long Island Grummanites will receive a United Way package. It has information on agencies the United Way supports. There is also a card for enrolling in the payroll deduction plan.

During the drive, Grumman representatives will ask those who don't participate in the payroll deduction plan to do so. They'll also ask those who do to increase their contributions. Grummanites may also make a one-time contribution.

Most off-Long Island facilities have United Way campaigns. See the accompanying box for information about when the United Way campaign will be held in your area. ■

Family Ties. *Don Cassese visits his grandson, Nicholas. Completing the picture is Nicholas' mom, Donna Thiess, who works in Corporate Benefits. Missing from photo is his other grandpa, Julio Diaz, of Electronic Systems' Estimating, Melville. (Photo by Bob Sagliocca)*

Stretching Your Donation Dollar

The cost of providing services to people in our neighborhoods would be even higher were it not for the thousands of volunteers who give their time and talents to these organizations. Take for example Rick Reutzel, manager of business operations for interdivisional programs in Data Systems.

Reutzel is a member of an Allocations committee. United Way of Long Island has eight such committees. His 20-member group meets three hours a night, once a week during the spring.

Last year Reutzel's committee reviewed 14 agencies. "Most of the agencies we review have programs for disadvantaged youth or family services," he says. This is Reutzel's third year on the committee. He volunteered after serving as a loaned executive to the United Way. "Once in a while, you've got to put something back," he says.

Don Stanford, a computer and security specialist in Data Systems, does volunteer work at both the United Way and for several member agencies.

Stanford is on the government/community relations committee for the United Way, which works to educate the community on important governmental issues that affect them. He is also a charter member of the Urban League of Long Island; he has been a board member for over 10 years. "I like to get involved in things where there is a worthwhile product for people," says Stanford.

The Urban League gets a major part of its budget from the United Way. Years ago, Stanford helped the Urban League set up a skills bank.

"Our objective was getting employment for minority people," he says. "Through the skills bank, we've placed thousands of people in jobs at no cost to the employers or themselves."

United Way Drives Near You

Every Grummanite should get a United Way package through the payroll department. It will contain information on agencies the United Way supports. There will also be a card for enrolling into the payroll deduction plan.

The United Way campaigns at the larger Grumman facilities nationwide will take place on the following dates:

Melbourne, Fla.
October 17-28

Glen Arm, Md.
October 10-28

Stuart, Fla.
October 10-28

Montgomery, Penn.
October 11-25

Roanoke, Va.
Oct. 1-Nov. 18

Milledgeville, Ga.
October 19-28

Sturgis, Mich.
October 10-28

Irvine, Calif.
Oct. 24-Nov. 18

Mayfield, Pa.
Sept. 16-Nov.13

Services For All Ages. *The children who get day care services at the Rosa Lee Young Childhood Center in Rockville Center, and the senior citizens at Yours, Ours, Mine Community Center in Levittown benefit from United Way funds.*

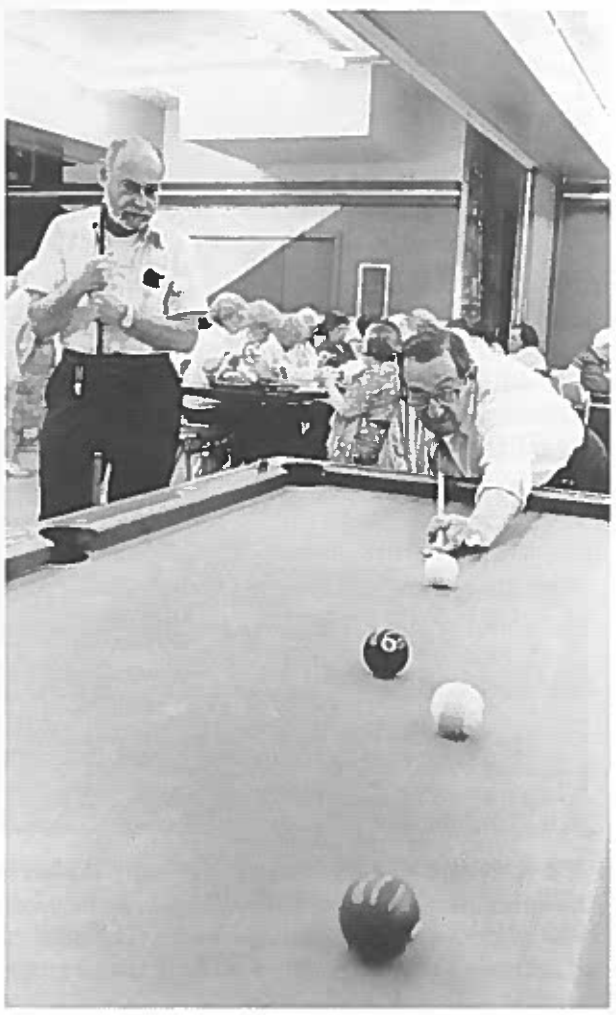
Training. *United Way funds all types of training, such as a print shop training program in Hempstead (L) or programs for the blind (below) at the Helen Keller Services for the Blind.*

Services Available To You

Here is a sampling of the types of services supported by the United Way. If you're looking for the name of an agency offering a specific service, Long Islanders can call (516) 249-1100. Grummanites in other locations will find local numbers in their United Way Campaign information packets:

Adult education
Alcoholism treatment
Child care
Community health clinics
Consumer protection
Crime protection
Drug rehabilitation
Emergency food and shelter
Family counseling
Food banks
Foster care
Health research
Hearing, speech, and sight testing
Hospice care
Job training
Legal aid
Mental health clinics
Rape-crisis counseling
Recreation
Senior citizen centers
Help for abused spouses
Suicide prevention
Physical therapy
Transportation for elderly and handicapped
Unemployment counseling
Workshops for the mentally handicapped
Youth development

Joy Of Caring. *Children with special needs find joy at the Little Village School in Garden City (L, C); seniors find enjoyment at the Yours, Ours, Mine Community Center. (Photos by Rich Breunig and Bob Sagliocca)*



Security — A Tiny Leak Can Sink A Ship

When it comes to defense security, what's your intelligence quotient? Here's a short true-or-false quiz.

A. A person who is betraying national secrets can usually be detected by strange behavior patterns and suspicious work habits.

B. Foreign agents are only interested in obtaining "top secret" or "secret" documents.

Both A and B are false - but unfortunately are commonly held misconceptions in and out of the defense industry.

"Spies don't usually look or act differently from anyone else in the workplace," says Harry Volz, Grumman's director of Corporate Security. "Second, confidential information can be quite valuable to America's enemies."

The Department of Defense defines confidential information as "facts which, if disclosed without authorization, can reasonably be expected to cause damage to the U.S."

Convicted spy Arthur James Walker retired from the Navy as a lieutenant commander and went to work for a small government contractor. His Navy career was unblemished; private sector colleagues described Walker as conscientious and upstanding.

Walker joined a spy ring run by his brother John. His need for money overpowered his good character traits. The KGB paid Arthur Walker $12,000 for two confidential documents.

The documents concerned maintenance and repair schedules for U.S. Navy ships — seemingly insignificant. But the Soviets were able to determine the type of weapon necessary to blow up a U.S. ship, and where to aim it for the greatest effect. Walker was sentenced to life in prison.

"This information could be used against other ships of the same class, among them, command ships for the Second and Seventh Fleets," says Volz. "These ships are vital communications centers for nearly half the Navy and a like portion of the NATO Naval Defense System."

The Walker spy ring had further ramifications. Two years ago, an American satellite spotted and monitored a new Soviet submarine. Data analysis determined that the Russians' ability to build quieter subs was 10 years ahead of where the U.S. Navy had expected it to be. The new sub was developed using information supplied by the Walkers.

"In addition, encrypted codes that were given to the KGB enabled Soviet intelligence to intercept and read Naval communications of the highest classification," says Volz. "Some of those intercepts resulted in severe losses in Vietnam."

The damage to national security and the U.S. defense position will be expensive to fix. Rear Admiral William Studeman has said "recovery from the Walker-Whitworth espionage will take years and millions of taxpayer dollars. Even given these expenditures, we will likely never know the true extent to which our capabilities have been impaired..."

While espionage will never be eradicated, experience has shown that it can be minimized by staying alert and adhering to security safeguards and procedures.

"Individual employees should not judge whether the actions or activities of other employees actually compromise national security," says Volz. "Any questionable activities should be reported in confidence to the Security Department, where they will be evaluated by people with the right training."

The Security Department continually educates employees about security threats and how to protect against them. Training officers give presentations to new employees during Grumman orientation sessions, keep educational materials up-to-date, and stay in touch with Grumman sites worldwide.

Grummanites with the proper security clearances may attend seminars. There, people from government, the military, law enforcement, and other contractors talk about the threat from foreign intelligence and technology transfer.

The Security staff also has a library of videotapes on these subjects, as well as on terrorism and drugs in the workplace. Grumman people are invited to borrow them by calling (516) 346-9810.

To ensure compliance with procedures, document inspectors make unannounced visits to Grumman facilities. They check to see that classified documents are properly marked, stored, and recorded in inventory.

"But the cleared employee is the link between classified documents and those hostile intelligence agents," adds Volz. "So, you must report all foreign travel to Security — particularly trips to communist nations and those hostile to the U.S.

"The Grummanite must do the same when attending a seminar in the U.S. where foreign nationals may be present," adds Volz. "The purpose is to inform the employee on how to deal with contacts by people seeking classified information."

Grummanites are urged to call (516) 346-2301 or 9810 if they have any questions, suggestions, or information on any security matter.■

It's A Wrap. *Crews in Bethpage ready the second X-29 Advanced Technology Demonstrator for its journey to Edwards Air Force Base, California. To protect it from the elements, the X-29 was shrink-wrapped in plastic. The plane was scheduled to leave on Monday, October 10. It's going by sea, via the Panama Canal, to Port Hueneme, California. From there it is trucked to Edwards. (Photo by Rich Breunig)*

Retiree Obituaries

Marion T. Glozek of 258 Stephen Oval, Glen Cove, N.Y., died August 21, 1988. She retired in 1965.

John L. Hanley of 157 Chop Tank Rd., Stafford, Virginia, died August 6, 1988. He retired in 1971.

Charles J. Hickey of 72 Roosevelt Blvd., Beverly Hills, Florida, died Sept. 16, 1988. He retired in 1974.

Gordon W. Hopper of 56 Constellation Rd., Levittown, N.Y., died August 12, 1988. He retired in 1982.

Peter W. Kaniewski of 2745 Birch Ave., East Meadow, N.Y., died Sept. 9, 1988. He retired in 1972.

John J. Kennedy of 47 Leyden St., Huntington Station, N.Y., died August 7, 1988. He retired in 1986.

Edward J. McClenin Jr. of 6 Seaver La., Smithtown, N.Y., died August 8, 1988. He retired in 1988.

Vacil Monivis of 3501 SW 104th Ave., Miami, Florida, died August 17, 1988. He retired in 1961.

Austin J. Mortimer at RD#1, Box 138, Pittstown, New Jersey, died Aug. 28, 1988. He retired in 1976.

Joseph A. Mulholland of 106 Round Swamp Rd., Old Bethpage, N.Y., died Sept. 10, 1988. He retired in 1982.

Felix J. Parise of 345 Abington Rd., Encinitas, California, died August 7, 1988. He retired in 1977.

William W. Ravi of 1723 SW 17th St., Boynton Beach, Florida, died August 18, 1988. He retired in 1975.

Peter J. Rollo of 86 Forest Ave., Glen Cove, N.Y., died July 26, 1988. He retired in 1966.

James Smith of 263 Flagler St., Sorrento, Florida, died August 17, 1988. He retired in 1977.

Ray M. Smith of 337 Marcy St., North Babylon, N.Y., died August 13, 1988. He retired in 1975.

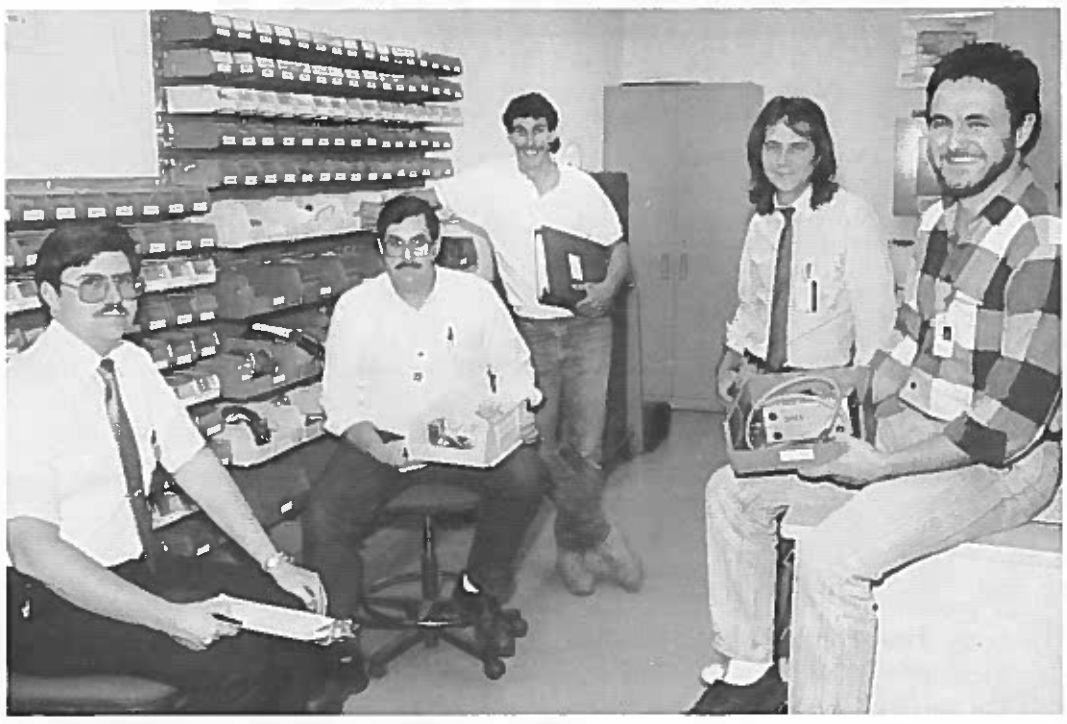
Charles W. Spencer of 8369 Annapolis Rd., Spring Hill, Florida, died Sept. 15, 1988. He retired in 1987.

James V. Vespoli of 4100 19th Way East, New Port Richey, Florida, died May 11, 1988. He retired in 1972.

Percy Williams of Century Village West, Mansfield, M 537, Boca Raton, Florida, died August 10, 1988. He retired in 1973.

Charles Wolchok of 242 Fenimore Ave., Uniondale, N.Y., died August 8, 1988. He retired in 1987.

Frank Young of 65-19 Colonial Dr., Margate, Florida, died July 20, 1988. He retired in 1976.



Winner's Circles. *'The Prowlers' (above) meet to discuss a problem. They are (clockwise) Earl St. John, Troy Smith, Arthur Bruning, Rich Migliorisi, William Walker, Ron Lay, Robert Gianino, Donald Gates, and Walter Tully. 'Calibration Masters' (L) show off their bin system: Bill Kotzky, Don Uhl, Tim Haas, Jim Martinsen, Frank Bondarchuck. Missing: Joanne Bechhoff.*

Talking About Quality. *These two circles revised the engineering planning sheet. At left, members of 'CenteRing' are: (L-R) Chuck Gosline, Anthony Riemer, Kal Pogoloff, John Murray, and David Orber. Above is 'The 'M' Team:' (L-R) Art Noveck, Charles Baldwin, Steve Schaefer, John Tartaro, Bob Aho, Steve Ciecwesz, Robert Smith, and Dominick Chiaiese. (Photos by Gerry Costello, Bob Settles, and Marie Trimborn)*

Four Quality Circles Receive '88 Project Awards

Companies everywhere are scrambling to work better, faster, cheaper, and smarter. The annual Quality Circles recognition ceremony, held September 23 in Grumman Headquarters, honored people for doing that at Grumman.

Quality Circles is an employee participation program that aims to improve quality and reduce cost. It has been in place for seven years at Grumman, and there are currently 40 quality circles in four divisions.

"Circle projects have saved the company half a million dollars so far this year," says Joyce Sparling, administrator of Quality of Work Life programs for Corporate Training. "That's more than double the cost savings documented last year, and 1988 isn't even over yet."

Group project awards went to four circles from the Aircraft Systems Division. The circles are: "CenteRing" and "The 'M' Team," from Bethpage and Calverton Methods; "Calibration Masters" from Calverton Measurement Standards; and "The Prowlers" from the Wing Inner Panel—Combination department in Bethpage's Bldg. 2.

"CenteRing" and "The 'M' Team" are the first two quality circles to team up on a problem. Not only that, they convinced Engineering and Program Management to adopt their solution.

The circle revised the engineering planning, or "P" sheet, which is produced by Grumman engineers on aircraft programs. When an aircraft part is affected by an engineering change, the "P" sheet lists procedures to follow, drawings and documents needed, and when those will be ready. The Methods department uses the information for production planning.

Some "P" sheets provided too much information, others too little. Extra time was required to verify or look up the missing facts. The revised "P" sheet only requires 10 categories of information. Eventually, all "P" sheets will be prepared on the same computer network.

The "Calibration Masters" developed a better way to store the 230 cables used in calibrating and troubleshooting "yellow gear," test equipment for airplane electronics.

"Before, these cables were stored in drawers, cabinets, boxes...you name it," says Bill Kotzky, the department supervisor and the circle's facilitator. "So we had to look in a lot of different places. If somebody left the department, the cables became even harder to find."

The circle designed a color-coded wall bin system that accommodates cables of various lengths. It also set up a computerized tracking system, using a personal computer the department already had.

The circle calculated a savings of 120 work-hours per year. Inspection is easier, making for better maintenance.

"The Prowlers" built a plug gauge kit to be issued by tool cribs. Plug gauges measure the tolerances of holes drilled in aircraft parts.

"People were forgetting to turn them in at the end of the day and many were reported missing," says Rich Migliorisi, the circle facilitator. "They also must be calibrated regularly. Before, maintenance schedules had to be followed for each individual gauge."

Each kit contains gauges of a variety of sizes. Now, the entire kit is sent in at the same time for calibration. The idea works so well, other areas of Bldg. 2 have adopted it.

The participation award went to Grumman Technical Services Division, which has encouraged the development of new circles and sustained its old ones. In addition, a circle from Technical Services won a NASA excellence award last year. That circle was the 'G'—T.E.A.M. (Grumman Technical Employees Assisting Management) from the Shuttle Processing Contract program, Kennedy Space Center.

A subsequent 'G'—T.E.A.M. project has attracted interest from both NASA and prime contractor Lockheed for use with the Shuttle Processing Data Management System. The project involves discouraging the system's 3,000 users from printing unnecessary information. Instead, a "system out" tape is created each night and reviewed the next day. Files are saved or erased depending on need.

Once fully under way, the project will result in a significant paper savings. More important, documents needed right away will not be held up by unnecessary printing.

Chuck Gosline of Bethpage Methods, Steve Waters of Wing

(Continued on page 12)

Schleicher Celebrates 50 Years At Grumman

Lillian Schleicher thought her job would be temporary when she began working at Grumman in 1938. On October 10, Schleicher, an executive secretary for Grumman's Paumanock Development Corporation, marked her 50-year anniversary as a Grummanite.

"I came here to work for Joseph Stamm, who was the secretary of the company at the time," she recalls. "His secretary was sick, so I filled in for the person who was replacing her, keeping inventory records. The next month I moved to the Engineering department. I was supposed to work for a couple of months, during their busy period. When that slowed down, I'd leave.

"But no one told me to leave, so I just stayed," she says.

Schleicher began as a typist, producing pilots' handbooks, stress reports, instruction manuals — any typing the Engineering department required. It was all done by hand on manual typewriters.

The company was much smaller in those pre-war years; Schleicher wears badge no. 541. "I remember around Christmas time, Mr. Grumman and Mr. Swirbul went down to the shop of Plant 1, shook everybody's hand, and gave out the Grumman turkeys," Schleicher says. "After the war started, there were so many more people being hired, it got to be too much."

Schleicher stayed in Engineering until the end of World War II. She began working for Anne Maher, executive secretary to company founder Leroy Grumman. That lasted almost two decades until Maher retired in 1964. Schleicher then began working directly for Grumman.

"Mr. Grumman was a real gentleman," Schleicher recalls. "Very quiet, unassuming...very polite and kind. He was a brilliant person."

Schleicher was one of only eight women in the company when she started. Later, during World War II, many women worked on the production line. But offices were still a male bastion.

"We became a very close-knit group of women...we had a half-hour for lunch," she says. "You couldn't go anyplace in a half hour, so we ate together every day.

"We were respected for the work we did, and appreciated," she adds.

Schleicher has worked for Paumanock Development since it was formed in 1972. She helps with the paperwork on Grumman's far-flung real-estate holdings.

"I have very diverse duties," she says. "It's constantly changing, and there's a lot of telephone work. I get to know people from all over the U.S., and I enjoy that."

Schleicher has no plans for retirement. "I enjoy working, and I don't keep track of the years," she says. "It came as quite a surprise when I was notified that my 50-year anniversary was coming up. I think if I had a boring job, I would have quit a long, long time ago."

She pauses a moment.

"But I'm sure I'll retire before my 60-year anniversary," she says. ■

Time Of Her Life. *Lillian Schleicher recently marked her 50-year anniversary as a Grummanite. The executive secretary for Paumanock Development enjoys her work and has no retirement plans. (Photo by Bob Settles)*

Quality Circles

(Continued from page 11)

Inner Panel/Combination, and John Mason of Engraving were presented with circle leader awards. Awards also were presented to outstanding facilitators and circles marking their three- and five-year anniversaries. Bob Byrnes and Dick Wolters of Assembly Operations, Building 2, were given recognition awards for their assistance to the Quality Circles program.

Quality Circles shares the same goals as the newer Total Quality Process, but they differ in one important respect. Quality Circles choose their projects, then seek management approval. In the Total Quality Process, management for each division has an agenda of problems to tackle.

For more information on how to form a circle, contact Sparling at (516) 575-1819. ■

Keeping Track Of Where You Are?

During October, telephone directory change cards will be distributed to all Grumman employees. Each card will contain the latest information regarding your phone extension and mail station.

If necessary, update the cards and return them to the Networks and Telecommunications department, C05-GHQ, by October 28. Changes will be reflected in the new edition of the Grumman Telephone Directory scheduled for publication within the next few months. ■

Place Your Grandparents' Names On Ellis Island Wall of Honor

Ellis Island in New York harbor was the gateway to America for millions of immigrants. It is where people filled with the American dream stopped being foreigners and started being Americans.

This landmark is now being restored. You can support this effort by placing your ancestors' names on the American Immigration Wall of Honor. This wall will be in a specially designed room that leads directly to the Great Hall.

For $100 each, you can submit the name(s) of your ancestors who immigrated to America. Your tax-deductible contribution will be used to complete the Ellis Island restoration and for the creation of the Ellis Island Immigration Museum.

For more information, write to: Ellis Campaign, The Statue of Liberty-Ellis Island Foundation, Inc., 52 Vanderbilt Avenue, New York, New York 10017-3808, or call Ann Jones, (212) 883-1986.

Readership Survey

We don't want to do all the talking. We'd like to know what you think about the things you see in these pages. Your comments, suggestions and complaints are welcomed. Please take a few minutes and give us your opinions.

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TQP Breakfast (P. 2)	☐	☐	☐	☐
Computers Communicate (P. 5)	☐	☐	☐	☐
United Way (P. 6)	☐	☐	☐	☐

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